

THE CLAIMS

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2
3 1. A method of manufacturing a pattern of a dental prosthesis from a
4 wax material, comprising the steps of

5 (a) forming a model of a patient's dentition including surfaces
6 corresponding to the dental structure nearby the location that the
7 dental prosthesis is to be placed in the mouth of a patient,

8 (b) scanning said surfaces of the model to collect three
9 dimensional digital data corresponding to the said surfaces,

10 (c) displaying on a monitor screen of computer aided design
11 equipment an image of a proposed dental prosthesis based, at least in
12 part, on the collected three dimensional digital data corresponding to
13 said surfaces,

14 (d) with the aid of said computer aided design equipment,
15 modifying said image so that said image displayed on the monitor
16 screen substantially corresponds to the dental prosthesis to be
17 manufactured,

18 (e) collecting the three dimensional digital data substantially
19 corresponding to said image of said dental prosthesis to be
20 manufactured and transmitting said three dimensional digital data of
21 said image of said dental prosthesis to be manufactured to automated
22 prototyping equipment,

23 (f) using the automated prototyping equipment making from a
24 wax material the pattern of said dental prosthesis to be manufactured
25 based upon said three dimensional digital data substantially
26 corresponding to said image of said dental prosthesis to be
27 manufactured.
28

1 2. The method of Claim 1 where the pattern has marginal edges that
2 are at least 3/4 of a millimeter from margins of an individual tooth
3 structure to which the dental prosthesis is to be attached.

4
5 3. The method of Claim 2 where, after step (f), the marginal edges of
6 the pattern are manually adjusted to compensate for the specific
7 configuration of said individual tooth structure by adding wax material
8 to said edges.

9
10 4. A method of manufacturing a dental prosthesis, comprising the
11 steps of

12 (a) forming a model of a patient's dentition including surfaces
13 corresponding to the dental structure nearby the location that the
14 dental prosthesis is to be placed in the mouth of a patient,

15 (b) scanning said surfaces of the model to collect three
16 dimensional digital data corresponding to the said surfaces,

17 (c) displaying on a monitor screen of computer aided design
18 equipment an image of a proposed dental prosthesis based, at least in
19 part, on the collected three dimensional digital data corresponding to
20 said surfaces,

21 (d) with the aid of said computer aided design equipment,
22 modifying said image so that said image displayed on the monitor
23 screen substantially corresponds to the dental prosthesis to be
24 manufactured,

25 (e) collecting the three dimensional digital data substantially
26 corresponding to said image of said dental prosthesis to be
27 manufactured and transmitting said three dimensional digital data of
28 said image of said dental prosthesis to be manufactured to automated
29 prototyping equipment,

1 (f) using the automated prototyping equipment making from a
2 wax material the pattern of said dental prosthesis to be manufactured
3 based upon said three dimensional digital data substantially
4 corresponding to said image of said dental prosthesis to be
5 manufactured, and

6 (g) using said pattern in the lost wax investment casting process
7 manufacturing said dental prosthesis.

8
9 5. The method of Claim 4 where the pattern has marginal edges that
10 are at least 3/4 of a millimeter from margins of an individual tooth
11 structure to which the dental prosthesis is to be attached.

12
13 6. The method of Claim 5 including, after step (f) and prior to step
14 (g), manually adjusting the marginal edges of the pattern to compensate
15 for the specific configuration of said individual tooth structure by
16 adding wax material to said edges.

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18 7. A method of manufacturing a pattern of a dental prosthesis from a
19 wax material, comprising the steps of

20 (a) forming a model of a patient's dentition including surfaces
21 corresponding to the dental structure nearby the location that the
22 dental prosthesis is to be placed in the mouth of a patient,

23 (b) creating three dimensional digital data corresponding to the
24 said surfaces, and based on said data corresponding to the said surfaces,
25 creating three dimensional digital data substantially corresponding to
26 the dental prosthesis to be manufactured,

27 (c) transmitting said three dimensional digital data of said dental
28 prosthesis to be manufactured to automated prototyping equipment,
29 and

1 (d) using the automated prototyping equipment making from a
2 wax material the pattern of said dental prosthesis to be manufactured
3 based upon said three dimensional digital data of said dental prosthesis.
4

5 8. The method of Claim 7 where the pattern has marginal edges that
6 are at least 3/4 of a millimeter from margins of an individual tooth
7 structure to which the dental prosthesis is to be attached.
8

9 9. The method of Claim 8 where, after step (d), the marginal edges of
10 the pattern are manually adjusted to compensate for the specific
11 configuration of said individual tooth structure by adding wax material
12 to said edges.
13

14 10. A method of manufacturing a dental prosthesis, comprising the
15 steps of
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17 (a) forming a model of a patient's bite registration including
18 surfaces corresponding to the dental structure nearby the location that
19 the dental prosthesis is to be placed in the mouth of a patient,
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21 (b) creating three dimensional digital data corresponding to the
22 said surfaces, and based on said data corresponding to the said surfaces,
23 creating three dimensional digital data substantially corresponding to
24 the dental prosthesis to be manufactured,
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26 (c) transmitting said three dimensional digital data of said dental
27 prosthesis to be manufactured to automated prototyping equipment,
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29 (d) using the automated prototyping equipment making from a
30 wax material the pattern of said dental prosthesis to be manufactured
based upon said three dimensional digital data of said dental prosthesis,
and

(e) using said pattern in the ^{lost} wax investment casting process
manufacturing said dental prosthesis.

11. The method of Claim 10 where the pattern has marginal edges that are at least 3/4 of a millimeter from margins of an individual tooth structure to which the dental prosthesis is to be attached.

12. The method of Claim 11 including, after step (d) and prior to step (e), manually adjusting the marginal edges of the pattern to compensate for the specific configuration of said individual tooth structure by adding wax material to said edges.

13. The pattern of a dental prosthesis made from a wax material in accordance with the method of Claim 7.

14. The dental prosthesis made in accordance with the method of Claim 10.